

**Renewable Energy question #28: Has Michigan, or have other jurisdictions, used a statewide net metering program? How have such systems handled small scale and larger projects? What policies have been proposed or tried regarding community renewables, meter aggregation and neighborhood net metering?**

***Response prepared by Vote Solar.***

Net metering is a policy that has been implemented by some 43 states to reduce the barriers to end-use retail electricity consumers for adoption of on-site electricity generation, primarily renewable and mainly solar. It's a fundamental building block policy for distributed generation, and can deliver many benefits to renewable energy owners, the grid as a whole, and all other ratepayers. The Solar Electric Power Association (SEPA - an educational non-profit organization dedicated to helping utilities integrate solar energy into their portfolio, comprised largely of utilities) assembled a group of experts to address net metering related issues. The current SEPA working definition for net metering is as follows: Net metering is a billing mechanism that credits solar system owners for the electricity exported onto the electricity grid. Under the simplest implementation of net metering, a utility customer's billing meter runs backward as solar electricity is generated and exported to the electricity grid and forward as electricity is consumed from the grid.

It is equally important to remember what net metering is not. It is not a policy to address technical safety and reliability issues. Such issues are addressed in the utility's interconnection standards. Net metering is designed to allow the host customer to offset some or all of their on-site electricity consumption by self-generation. In fully regulated states, this is the only form of customer choice that consumers may have.

The net metering policy is generally applicable to all customer types, although clearly some customer groups are more likely to take advantage of this alternative. For example, residential, small business, and large commercial and industrial customers are the most frequent hosts for such on-site generation. There have been a number of studies performed that compare the values and benefits derived by the utility and the grid from net metered solar energy projects, that offset any utility costs incurred. In isolation, a host utility receives less revenue (as with any sales reduction for any reason) from the net metered customer due to reduced sales to customers with on-site generation, however such revenue reductions are offset by additional values including but not limited to avoided marginal fuel costs, reduced need for new generation and transmission facilities, deferred or avoided distribution system upgrades, and reduced electricity losses across the grid. It should be noted that the full list of benefits usually considered is far more extensive.

The specific benefits and values delivered depend on locational-specific factors. Some recent analyses include one in California done by the consulting firm Crossborder Energy which found that, at 5% of non-coincident peak load under current rate structures, the benefits net of the costs of net metering totaled about \$90 million annually. (<http://votesolar.org/wp-content/uploads/2013/01/Crossborder-Energy-CA-Net-Metering-Cost-Benefit-Jan-2013-final.pdf>) The costs avoided were found to be approximately 19.3¢ per kWh. Studies in other states have found values that range from 12.8¢ (Austin Energy, Texas) to 25-32¢ (New Jersey and Pennsylvania). These figures can be compared to retail rates to determine net benefits.

It is important to note that net-metering in itself does not necessarily make a successful distributed generation market. It's impact as a policy depends largely on local rate structures. It may be useful to use an analogy: think of net metering as the road, and the combination of rate structures, cost of renewable generation, and any available incentives are the engine.

#### Community Solar

This is a growing trend across the country. The term is rather broad, and encompasses many different

business models. At its most basic, these programs simply provide more ways for people to participate in the benefits of renewables. Some utilities have developed programs where centralized solar projects are built that allow retail customers to participate as owners or subscribers in the project, pay a small delivery charge or in some cases receive free delivery, and reduce monthly consumption by their pro rata share of the generation. This model can utilize other types of renewable resources as well.

#### Meter Aggregation

This is a twist to net metering policy that allows multiple meters –usually co-located on a single property – to be aggregated for purposes of offsetting net-metered generation. The benefit of this program is that it allows for the maximization of siting potential. Imagine, for example, an instance where a farmer has multiple meters serving irrigation pumps on a single property. With meter aggregation, the farmer could choose the site with the best wind or solar generating potential, and not worry about laying a lot of conduit to each meter or installing several smaller, less efficient systems at each meter. It makes the program more efficient, and lower cost.

Another great application is virtual net metering for multi-tenant buildings. With this application, the owner of a building could install solar on the roof, and then credit the meters of the tenants – without having to hard-wire to each meter (a costly process). California has recently developed this program, and its being used to great effect particularly with low-income housing.

In sum, net metering is a foundational policy for customer choice and opening access to retail consumer self generation, at no cost to the incumbent utilities. Further, it has largely been responsible for the growth of small, local solar installation companies and the jobs and indirect economic gains made at the local level.

#### Further references:

- IREC best practices model can be found at <http://freeingthegrid.org/#education-center/best-practices/>
- Michigan currently has a “B” ranking for its net metering policies, according to Freeing the Grid, a rankings website managed by four non-profit agencies with high levels of experience with distributed solar. By reducing or eliminating certain sizing limitations, Michigan could regain its “A” Ranking. (<http://freeingthegrid.org/#state-grades/michigan>).